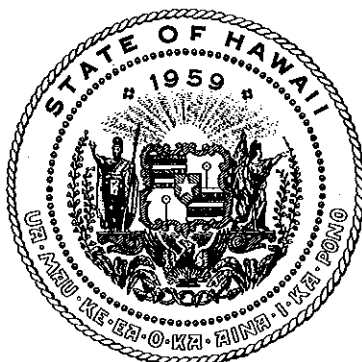


**REPORT TO THE TWENTY-FIFTH LEGISLATURE
REGULAR SESSION OF 2009**

**RELATING TO THE NATURAL AREA RESERVES SYSTEM,
NATURAL AREA PARTNERSHIP PROGRAM,
AND
THE FINANCIAL CONDITION OF THE
NATURAL AREA RESERVE FUND**



PREPARED BY

**STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE**

IN RESPONSE TO SECTION 195-6.6, HAWAII REVISED STATUTES

**HONOLULU, HAWAII
DECEMBER 2008**

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LIST OF ACRONYMS

BLNR	Board of Land and Natural Resources
DLNR	Department of Land and Natural Resources
DOE	Department of Education
DOFAW	Division of Forestry and Wildlife
EMWP	East Maui Watershed Partnership
EMoWP	East Molokai Watershed Partnership
FSP	Forest Stewardship Program
FY	Fiscal Year
GIS	Geographic Information System
HAWP	Hawaii Association of Watershed Partnerships
HRS	Hawaii Revised Statutes
HTA	Hawaii Tourism Authority
IFB	Invitation for Bid
ISC	Invasive Species Committee
KWA	Kauai Watershed Alliance
KWP	Kohala Watershed Partnership
KMWP	Koolau Mountains Watershed Partnership
LHWRP	Leeward Haleakala Watershed Restoration Partnership
MISC	Maui Invasive Species Committee
MLPC	Maui Land and Pineapple Company, Ltd.
MoMISC	Molokai Invasive Species Committee
NARF	Natural Area Reserve Fund
NAR	Natural Area Reserve
NARS	Natural Area Reserves System
NAPP	Natural Area Partnership Program
OISC	Oahu Invasive Species Committee
PKW	Puu Kukui Watershed Preserve
T&E	Threatened and Endangered Species
TMA	Three Mountain Alliance
TNC	The Nature Conservancy of Hawaii
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WMMWP	West Maui Mountains Watershed Partnership
HYCC	Hawaii Youth Conservation Corps

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PURPOSE

Section 195-6.6, Hawaii Revised Statutes (HRS), requires an annual comprehensive status report on the Natural Area Reserves System (NARS), the Natural Area Partnership Program (NAPP) and the financial condition of the Natural Area Reserve Fund (NARF). This report will include, but not be limited to, a description of activities and accomplishments, compliance with Chapter 42F, HRS, analysis of the problems and issues encountered in meeting or failing to meet the objectives set forth in the management plans, status of public hunting opportunities, financial report, and plans and management objectives for the next fiscal year for the NARS Program and NAPP, an overview of the financial condition of NARF, including receipts and expenditures from NARF for the previous fiscal year, and a brief discussion of activities and goals for other programs funded through NARF.

NATURAL AREA RESERVES SYSTEM (NARS)

1. DESCRIPTION OF ACTIVITIES AND ACCOMPLISHMENTS

The statewide NARS currently consists of 19 reserves comprised of approximately 109,165 acres on five islands. NARS was established to protect the best remaining examples of native ecosystems and geological sites in the State. Annual program activities are based primarily on the long-term integrated management plans developed for each reserve and adaptive management principles, to enable effective response to changing conditions and new threats. Management policies approved by the NARS Commission and the Board of Land and Natural Resources (BLNR) continue to be the general guide for rule-making and development of management plans for NARS. While NARS is based on the concept of protecting native ecosystems, as opposed to single species, many rare and endangered plants and animals benefit from the protection efforts through NARS. Major management activities involve control of alien species, including ungulates, weeds, coqui frogs, and small predators, rare plant outplanting, monitoring, public outreach, and maintenance of existing infrastructure, such as trails and signs. Large-scale management actions, such as fences, typically go through an environmental assessment (EA) process.

NARS Commission

The NARS Commission (<http://hawaii.gov/dlnr/dofaw/nars/nars-commission>) was established by statute as an advisory body to the Department of Land and Natural Resources (DLNR) under §195-6, HRS. The Commission held 5 meetings during the past fiscal year. Topics ranged from the closure of Kahaualea NAR (Island of Hawaii) due to volcanic activity, the closure of a portion of Ahihi-Kinau NAR (Maui) to monitor and mitigate damage due to recreational visitation, updates on projects and planned management in individual NARS, the weed risk

posed by biofuels, the proposed biocontrol for strawberry guava, the issuance of special use permits to film in NARS, and the creation of new NARS. In addition, during Fiscal Year (FY) 08, the NARS Commission continued the strategic planning process initiated in FY 07 for the NARS Program, involving both Commission and DLNR's Division of Forestry and Wildlife (DOFAW) staff. The strategic plan was finalized and adopted by the NARS Commission in September, 2008. For the Strategic Plan of the Natural Area Reserves System, link to <http://hawaii.gov/dlnr/dofaw/nars/SP9.4.08.pdf>.

Another activity of the NARS Commission and staff is to prioritize and nominate areas to be designated and placed within NARS, and justify the management resources to be dedicated to them. In FY 08 and continuing into FY 09, the Commission and staff are developing a state-wide analysis of the biological resources of Hawai'i. This analysis draws from the most comprehensive up-to-date compilation of scientific data to fulfill the NARS' responsibility to preserve representative samples of Hawaiian biological ecosystems and geological formations. This data will also be used to inform future management plans for these areas, highlight conservation opportunities for partnership on private land, as well as help develop educational presentations to improve the public's appreciation of our natural heritage. In FY 09, unique natural areas nominated for designation will continue to be evaluated with this analysis, and public hearings will be held in the process to designate new NARs. Among other things, this project resulted in an executive order being requested by BLNR to include an area in the Alakai plateau into NARS, expanding the existing Hono O Na Pali NAR (Kauai). Detailed information on this activity can be found at <http://hawaii.gov/dlnr/dofaw/nars/nars-designation>.

Statewide activities and accomplishments

During FY 08, NARS staff conducted ground and aerial surveys for ungulates (hooved animals, including sheep, mouflon, deer, goats, and pigs). Fencing continues to be an important tool to facilitate the reduction in animal populations. Existing fences were inspected and maintained, and four miles of new fencing were under construction. Public hunting, staff control, trapping, snaring (in remote/fenced areas), and aerial shooting were used to reduce non-native ungulate populations. The type of control measure implemented depends on the resources available, the reserve location, the effectiveness of public hunting, terrain features, and the relative abundances of ungulates. NARS staff continues to work with hunting organizations such as the Molokai Hunting Working Group, the Molokai Pig Hunters Association, the Pig Hunters of Hawaii, and others to accomplish control goals while minimizing conflict with the recreational hunting community.

Invasive weed control is ongoing in nearly every reserve, and priority weeds have been identified for each reserve (and sometimes for units within reserves). Volunteers provide significant manual labor to assist in weed control efforts. NARS staff also communicates with the respective island Invasive Species Committee (ISC) to prevent duplication and coordinate efforts where possible. However, because the ISC's effort are directed towards incipient species, this coordination is most effective when responding to new weed outbreaks in NARS and less involved when controlling established species that threaten native ecosystems. Monitoring of rare plant populations, collection of seeds and propagules, and outplanting of rare plants are ongoing efforts to protect and enhance the rare plants found within NARS. Additional information about the accomplishments of the State's rare plant program in FY 08 follows the island descriptions below.

Maintenance of infrastructure is also an ongoing activity. Staff maintained over 500 signs

throughout NARS. Information and boundary signs were installed or replaced in several reserves. Approximately 125 miles of existing trails and boardwalks were maintained in various reserves, primarily for management purposes. Trail maintenance includes alien plant control along the trails to minimize the spread of weeds to new areas. Over 145 miles of existing ungulate control fence were maintained with regularly scheduled inspections, and immediate repairs were made to prevent ungulate ingress and subsequent damage to the resource. Existing helipads were maintained to facilitate management and monitoring and to provide access for emergencies. Over 15 management shelters were maintained for long-term management actions. Over 70 miles of roads, mostly on Hawaii and Oahu, were maintained to provide hunter and management access. Road barriers continue to be maintained in the Manuka Reserve on Hawaii to prevent dumping and illegal logging activities. Vehicle barriers continue to be maintained on both sides of Kaena Point (Oahu) to protect the fragile dune ecosystem and cultural sites by prohibiting off-road vehicle use rock barriers were installed along pull-off stretches in Ahihi-Kinau to protect geological and cultural features from off-road damage.

Staff training for needed skills remains important. Training during FY 08 included first aid, CPR, fire response, all-terrain vehicle (ATV) operation, helicopter safety/crew member training, herbicide use, ungulate control methods, procurement (small purchase, Hawaii e-Procurement System (HePS), Invitation For Bid, and Requests For Proposals), ArcGIS, leadership skills, and mediation. In January 2008, the Hawaii Island NARS Manager received the "Most Outstanding Graduate" award from the Hawaii Leadership Academy. In addition, NARS staff attended the Hawaii Conservation Conference (July 2007), an annual three-day conference attended by nearly 1,000 resource management professionals in the State. Finally, NARS staff on Maui and Hawaii continued the successful "exchange program" with the natural resource managers of East Maui Watershed Partners (EMWP) to share field methods and develop skills. Two week-long exchanges took place, with EMWP and Maui NARS crews going to Hawaii to assist Hawaii NARS staff with invasive species control, and later with Hawaii NARS staff going to Maui to assist in fence building.

NARS staff processed over 35 special use permit requests and coordinated permit processing with other DOFAW staff (wildlife, botanist) to ensure that applicants applied for all necessary permits. NARS staff conducted outreach presentations to multiple audiences and coordinated field visits for numerous groups, including visiting dignitaries, visiting (mainland) staff from cooperating agencies (e.g., United States Forest Service (USFS), United States Fish and Wildlife Service (USFWS)), the Pacific Century Fellows, and the University of Hawaii (UH) Law School. NARS staff responded to multiple requests for information from the public (as forwarded by the DLNR Public Information Officer). NARS staff continued participation with the national Natural Areas Association, the Wekiu Bug Working Group, the Hawaii Conservation Alliance (DOFAW Representative), the Forest Stewardship Advisory Committee, the Hawaii Conservation Conference (primary organizer), the Bioprospecting Commission (DLNR Representative for monthly meetings), and provided assistance to other DOFAW programs on an ongoing basis.

Finally, NARS staff continue to leverage resources and increase effectiveness by working with a variety of watershed partnerships and other conservation partners including: Kauai Watershed Alliance, EMWP, West Maui Mountains Watershed Partnership (WMMWP), Leeward Haleakala Watershed Restoration Partnership (LHWRP), East Molokai Watershed Partnership, Three Mountain Alliance, Kohala Watershed Partnership, the Plant Extinction Prevention

Program, the Maui Forest Bird project, the Kauai ISC, the Oahu ISC, the Maui ISC, Big Island ISC, the Office of Mauna Kea Management, the USFS (Hawaii Experimental Tropical Forest), the USFWS, The Nature Conservancy (TNC), The Wildlife Society, and more.

Reserve activities and accomplishments by island

Major accomplishments within individual reserves during the past year include the following:

Kauai

Ongoing management in Kauai NARS includes maintenance of existing fence lines, invasive weed control, and rare plant protection through seed collection, propagation, and outplanting. In addition to work inside NARS, staff participated in activities outside NAR, including invasive weed control and rare plant protection and outplanting, with other partners of the Kauai Watershed Alliance. Specific accomplishments within individual reserves include:

Hono O Na Pali (3,150 acres; mesic and wet forest with perennial streams): Surveyed fence lines and fence enclosures; monitoring and collection of seeds from four species of rare plants; implemented remote field monitoring protocol; conducted public hearing for proposed expansion of Hono O Na Pali NAR. Hunters reported 251 hunting trips in Unit G (which includes Hono O Na Pali), resulting in 170 goats and five pigs removed. These numbers reflect a special goat rifle hunt conducted in Kalalau during August 2007.

Kuia (1,636 acres; dry and mesic forest with perennial streams): mapping and inventorying of rare plant enclosures including detailed rare plant inventories; maintenance and repair of damaged fencing; conducting intensive weed control within fenced enclosures, targeting strawberry guava, karaka nut, lantana, blackberry, daisy fleabane, and weedy grasses; outplanting six listed threatened and endangered species within fenced enclosures, including four species on the PEPP (Plant Extinction Prevention Program) list. Hunters reported 1,884 trips in Unit H (which includes Kuia), resulting in 121 pigs, 43 goats, and three blacktail deer removed.

Oahu

Ongoing management on Oahu includes weed control, ungulate monitoring and removal, fence maintenance, rare plant propagation and outplanting, and habitat protection. Specific accomplishments within individual reserves include:

Pahole (658 acres; dry and mesic forest): Continued construction on the new Kapuna/Keawapilau fenceline (95% complete by the end of FY 08); conducted regular inspections and maintenance on approximately 15 km of fenceline; coordination with Army Environmental Natural Resources staff to successfully eradicate a pig population which occurred in a formally pig free unit (222+ acres) (cause of incursion undetermined); successfully removed ungulates from a 29+ acre enclosure newly created as part of the Kapuna fence project; coordinated a series of escorted public hunts throughout areas newly enclosed by the Kapuna fence project, hunts will continue into 2008 until public effort has been fully exhausted; coordinated outreach/education visits, including trips with personnel from DLNR's Division of Conservation and Resources Enforcement (DOCARE), as well as public hunter outreach.

Kaala (1,100 acres; dryland to wet shrub forest): Monitored invasive species' distribution (sphagnum moss) and controlled blackberry; monitored for ungulate activity and conducted control when necessary; implemented low-impact emergency control measures to remove a

small group of feral pigs that possibly gained access to the bog by an open trail gate; monitored and removed feral goats in the upper Mokuleia Forest Reserve adjacent to the NAR to reduce the potential for goat ingress into the NAR; coordinated outreach/education visits, including trips with personnel from DOCARE; began planning for boardwalk replacement.

Kaena Point (76 acres; coastal dune ecosystem): Continued planning for the proposed construction of a predator-proof fence to exclude dogs, cats, mongoose, rats, and mice from the point; maintained low-impact barriers along the hiking trails to discourage wandering into seabird (Laysan albatross and wedge-tailed shearwater) nests or monk seal haul-out areas; installed and updated signage regarding resource issues and rules; increased predator control actions through the use of new techniques and tools (including spotlighting and leghold traps); redrafted predator control contract with the United States Department of Agriculture to reflect changing needs and to improve effectiveness; supported research and monitoring of seabird activity; coordinated outreach/education/work trip visits, including trips with personnel from DOCARE; controlled priority invasive weeds; installed a 50-meter high-precision grid system for use with plant and animal monitoring; conducted pre-fence construction rodent monitoring; participated heavily in the DLNR's Stewardship Initiative as a member of the Ocean Resource Management Plan team for the Kaena Point site.

Maui

Ongoing management includes fence construction, ungulate control, people/human impact management, invasive weed control, rare plant protection, and public outreach. In addition to conservation management within NARS, Maui NARS staff participated in activities with a variety of watershed partnerships and other conservation partners. For example, NARS staff assisted EMWP in maintaining and building fences within the East Maui watershed, coordinated with resource staff from Kalaupapa National Historic Park to conduct three helicopter supported volunteer hunts, conducted three aerial shooting missions (removing 667 goats, 86 pigs, and 26 deer), and began the second phase of fencing in Puu Alii NAR makai as part of the East Molokai Watershed Partnership. Staff worked with WMMWP to maintain and build fences in West Maui, and partnered with DLNR's Division of Aquatic Resources, Hawaii Wildlife Fund, Hawaii Institute of Marine Biology, the National Oceanic and Atmospheric Administration Whale Sanctuary, Action Ahihi, Kihei Charter School, REEF, and other volunteers to increase marine education and outreach activities. Specific accomplishments within individual reserves include:

Ahihi-Kinau (2,045 acres; recent lava flows, anchialine ponds, and nearshore marine ecosystem): Provided a seven-day a week on-site management presence at this accessible and most-visited reserve (average 700 people/day); conducted invasive species control of pickleweed in anchialine ponds and kiawe removal along roadway (to increase visibility in high illegal activity areas); maintained contract for the maintenance of 4 portable toilets, emptied trash daily; coordinated with DOCARE to address over 100 incidents of illegal activity; completed impact assessment survey of anchialine ponds; completed nearshore marine survey and coral trampling survey of NAR (with funding from the Hawaii Tourism Authority); coordinated unexploded ordnance ground survey and ordnance removal with the United States Army Corps of Engineers; conducted biological surveys for and successfully found the endangered moth *Manduca blackburni* and the rare plant *Canavalia pubescens* (candidate for listing); hired an outreach and education coordinator; participated in outreach opportunities including class visits, Earth Day festivals, community meetings, Youth Conservation Corps (YCC) projects, and educational tours (over 300 educational hours); coordinated service projects for various groups including invasive

vegetation removal, litter pickup, and net removal (over 1,200 service hours); completed a one-year grant funding an experimental volunteer program partnering with the 'Action Ahihi' group (1876 volunteer hours); developed a two-year action plan recommending a two-year closure of a majority of the Reserve to immediately address impacts occurring to resources due to recreational overuse; participated heavily in the DLNR's Stewardship Initiative as the lead for the Ocean Resource Management Plan team for the Ahihi-Kinau site. For detailed information on recent activities at Ahihi-Kinau link to <http://hawaii.gov/dlnr/dofaw/nars/reserves/maui/ahihikinau>.

Hanawi (7,500 acres; ohia wet and cloud forest, alpine grassland, and perennial streams): Maintained 10+ miles of fenceline; maintained 2,000 acres above fencing as pig-free; in cooperation with EMWP, constructed new camp infrastructure to support future new fence construction and ongoing cyclic fence replacement of the 5,400' contour lower boundary fence involving replacing new posts and wire on a ¾ mile section.

Kanaio (876 acres; halapepe and lama dry forest): Finished construction of first half of 1,500-acre deer-proof fence enclosure of the mauka section of NAR; helped acquire new bulldozer for Maui DOFAW for construction of a new 4-wheel drive road and fence line for beginning construction of the next phase of deer fence; maintained 3 ½ acre experimental outplanting/restoration site and outplanted native trees; controlled invasive weeds (*Bocconia*, *Schinus*, and other trees) in 200 acres of the reserve; initiated a two-day interagency cooperative weed control effort over another 100 acres with TNC, Maui ISC, EMWP, and LHWRP staff; continued monitoring of 24 vegetation plots; used volunteers, other agency staff, and YCC to attach hog-ring apron along the bottom of the 3 miles of recently completed fencing.

West Maui (6,702 acres; pili grassland, mesic, wet, and cloud forest, montane bogs, and perennial streams): Kahakuloa: Maintained two miles of fencing along lower boundary; finished one mile section of lower boundary fencing; maintained three miles of trails for ungulate monitoring and management; removed 5 pigs from above/within the fenced area; in coordination with the PEPP, test planted *Cyanea asplenifolia*; in cooperation with WMMWP, replaced old and installed new strategic fences (½ mile in length) at three locations; Panaewa: in cooperation with WMMWP, monitored to ensure pigs had been eradicated from portion of NAR where incursion had taken place three years ago (no new activity observed); Lihau: Established post-fire ecosystem pili grass experiment; completed archaeological survey and report for fire break improvements; Honokawai: Aerial monitoring for presence/absence of ungulates (absent) and maintenance of helicopter landing zones.

Puu Alii (1,330 acres; wet shrubland and forest with perennial streams): In cooperation with staff from Kalaupapa National Park, completed ¾ miles of new deer-proof fence along Waikolu Valley rim; supported three volunteer hunter helicopter trips to remove pigs from within fenced 550 acres in the upper (mauka) portion of the reserve.

Olokui (1,620 acres; mesic forest, wet shrubland and forest with perennial streams): Due to the near pristine condition of Olokui and its remoteness and inaccessibility (limiting threats of ungulate damage or weed invasion), active management was not necessary in FY 08. Aerial shooting was resumed after a four-year hiatus and aerial surveys continue to monitor the summit region for the presence/absence of ungulates and ungulate signs.

Hawaii

NARS Big Island staff continued management of eight reserves (82,500 acres) on the Island and participation in a number of cooperative partnerships, including the Kohala Watershed Partnership, Olaa-Kilauea Partnership/Three Mountain Alliance, Big Island Invasive Species Committee, the United States Geological Survey (USGS) Hawaiian Volcano Observatory, the Office of Mauna Kea Management and numerous informal partnerships with neighboring landowners. In addition, NARS staff participated in the management and continued development of the Hawaii Experimental Tropical Forest, coordinated ungulate removal at the Puu Waawaa Forest Bird Sanctuary, and hosted both YCC summer teams and year-round Americorps interns. The program hired a new Outreach and Education Specialist to develop and expand the Hawaii Island NARS outreach programs. Major improvements were done to the Hilo Base yard volunteer house and the Kiolakaa Ranger station to increase the capacity to support volunteer and school groups. Ongoing management island wide includes ungulate control through public hunting, staff control, trapping, and snaring, invasive weed and small animal control, rare plant protection (reintroducing almost 2,850 plants of 28 different species), and contracting for surveys needed for appropriate management (archaeological inventories, boundary surveys, etc.). Specific accomplishments within individual reserves include:

Mauna Kea Ice Age (3,894 acres; alpine community): continued coordination with the Office of Mauna Kea Management (OMKM) on protection of the unique natural and cultural features on the summit through meeting with OMKM Rangers and through funding of archaeological inventory; reviewed permit requests to access NAR for research and for educational opportunities; removed 12 sheep from NAR; developed a revised plan for the military to mitigate impacts from the un-permitted landing of a helicopter in the adze quarry in 2007; initiated design and planning for fence enclosure to protect silversword population. The Hawaii Island NARS Manager was appointed to the Mauna Kea Management Board (MKMB) and the Environment Subcommittee of MKMB.

Puu O Umi (10,142 acres; wet forest, montane bog, perennial streams): Participated in hiring and support of Kohala Watershed Partnership Coordinator to finalize and begin implementing the draft Kohala Watershed Management Plan; maintained existing fenced units including the upgrade of 0.6 km of fencing in the Waimanu Bog Plateau; maintained over 14 km of trails and transects; controlled key weeds in sensitive areas; outplanted rare species; received approval from the Queen Emma Land Company regarding joint management/protection of the Koaia Corridor; participated in review and development of the EA for the Kohala Watershed Partnership Management Plan that includes activities within Puu O Umi NAR; assisted with the completion of the EA process for the Kaneaa fencing project; assisted with the construction of 0.6 km of fencing in cooperation with the Kohala Watershed Partnership and the EMWP on a work exchange.

Laupahoehoe (7,894 acres; wet forest with perennial streams): Continued to participate in the creation and implementation of the Hawaii Experimental Tropical Forest (HETF, <http://www.hetf.us/>) (including review of and distribution of HETF permits, monthly planning meetings, etc.); fence maintenance; rare plant monitoring and outplanting; ungulate control (six pigs); invasive species control; and installation and collection of data for 12 vegetation monitoring plots. Monitoring in the remote sections of the NAR revealed a new species record in the NAR of *Pritchardia spp.* and two new populations of the rare *Cyanea tritomantha*.

Kahaualea (16,726 acres; wet forest with volcanic activity): responded to the new eruptive activity at Kilauea (commencing July 21, 2007) by coordinating with USGS Hawaiian Volcano Observatory, Hawaii Civil Defense, DOCARE, and other agencies, adding and maintaining signage, and closing the NAR to public use due to safety concerns; and developed an memorandum of understanding (MOU) with USGS Hawaiian Volcano Observatory to monitor and advise DLNR of the hazards from the new eruptive activity. BLNR ratified the closure in February 2008, for a term of up to two years.

Waiakea 1942 Flow (640 acres; developing wet forest): due to the remoteness and small size of this NAR and its establishment to act as a baseline for change, active management was not necessary in FY08.

Puu Makaala (12,106 acres; wet forest): maintained fencing; removed 294 pigs from Wright Road unit (now considered ungulate-free); removed 18 pigs from adjacent portions of the NAR using volunteers; monitored over 30 km of transects to assess ungulate activity and weed distribution; cooperated with the Three Mountain Alliance (formerly the Olaa-Kilauea Partnership) in conducting rare plant outplanting, invasive weed control; supervised volunteers.

Manuka (25,550 acres; coastal to subalpine forest): Continued to work with the Coqui Coordinator to monitor and contain coqui frog populations at Manuka, (eradication of the coqui population in the NAR is not currently feasible); upgraded water holding capacity to facilitate fire suppression and invasive species control; removal of feral animals (10 pigs and 12 goats) in cooperation with adjacent landowners; invasive species (fountain grass) removal over 10,000 acres; removed and cleaned tons of trash from the coastal areas and illegal dumping sites; continued progress to acquire private in-holding; assisted with contracted professional surveyor to determine the boundary of the NAR; partnered with the Three Mountain Alliance (TMA) for the archaeological survey of the boundary corridors; mediated management planning; conducted rare plant outplanting; maintained existing fence units, roads, and trails; and supervised volunteers and partnered with TMA for a Department of Education (DOE) teacher workshop.

Kipahohoe (5,583 acres; mesic to wet forest): Completed fenced enclosure of 1,500 acres; coordinated animal control; conducted rare plant protection through seed collection and outplanting; maintained fenced units; invasive species control; upgraded water holding capacity to facilitate fire suppression and invasive species control; continued road and trail maintenance.

For detailed information on the NARS, please go to <http://hawaii.gov/dlnr/dofaw/nars>.

Rare Plant Species Restoration and Protection FY 08

The focus of the NARF support of the Rare Plant Program for FY 08 includes support of habitat protection and enhancement projects within the NARs on the Island of Hawaii, support for the propagation efforts of Volcano Rare Plant Facility and Lyon Arboretum Micropropagation/Seed Storage Facilities (Oahu), and the statewide PEPP.

In FY 08, the PEPP focused its field efforts on preventing the extinction of its 184 target species, that is, those species that number fewer than 50 individuals remaining. This year, the PEPP conducted monitoring for 135 species, placing 94 of these into *ex situ* or off-site cultivation at either a cooperating rare plant nursery or botanical garden, tissue culture at the Lyon Arboretum's Micropropagation Lab, or in the Center for Conservation Research and Training Seed Storage Lab. In addition to these totals, surveys were conducted for 107 species, of which

18 species were either rediscovered or new populations were found.

To protect the founders in the wild, the threats were managed for 28 species. This entailed alien plant control, fence construction and maintenance, rat trapping, and bagging fruits to protect them from invertebrate and rodent pests. Several noteworthy projects or finds include: the joint *Hesperomannia arbuscula* pollination program on Oahu that has already resulted in dozens of seedlings; the discovery of the only known plant of *Kadua cordata* var. *remyi* on Maui; rediscoveries of two mints on Molokai; and a rediscovery of *Clermontia peleana* ssp. *peleana* on Hawaii Island that will result in the reintroduction of at least 4,000 plants to their natural habitats in FY 09; the construction of a technically challenging fence around a newly discovered population of Mauna Kea silverswords, which involved the Natural Area Reserve staff, the Silversword Alliance, Office of Mauna Kea Management, contract archeologists, and others without whose assistance, the project could not come to fruition. These are just a sample of the many notable PEPP projects and discoveries on Oahu, Maui, Molokai, Lanai, and Hawaii.

Volcano Rare Plant Facility participates in a statewide program to prevent native plant extinction. The facility focuses on a list of 146 threatened and endangered plant species that occur on the Big Island. Twenty-four of those listed are already considered to be extinct in the wild. The Facility's goal is to prevent any more species from becoming extinct. To accomplish this, the Facility works to increase the species' numbers by various methods of plant propagation and maintain a gene bank of plants and seeds. An integral part of the Facility's efforts is the research component that includes developing propagation and cultural treatments and studying phenology for taxa that have not been previously studied. Working closely with DOFAW collectors from the forestry, NARS, and the PEPP, the Facility tracks populations and adds new founders to maximize genetic diversity. Species are out planted to appropriate habitats with the collaborations of federal, state and private land managers. This fiscal year, the Facility had an inventory of 81 species (47 endangered, 9 candidate, and 25 species of concern). In addition, the Facility produced 6,289 threatened or endangered plants for out planting. They represent 39 listed species that were restored to protected sites on the Big Island.

The focus in the Hawaii District NARS Rare Plant Program is protection of large areas of endangered plant habitat. This Program addresses threats that affect large areas to increase success when accomplishing reintroductions by outplanting into large ungulate-free, fenced, stable units that are not being overrun with weeds, rats, etc. NARS staff planted over 2,200 plants from Volcano Rare Plant Facility and the State Tree Nursery in Waimea with support from state funds and federal Section 6 grants. Not all of this year's outplants were rare species, but a combination of rare and common plants. Staff used common species such as koa, mamane, ohia, koaia, and kolea to rehabilitate sites, improve existing sites and install infrastructure for future rare plant introductions. Staff worked with the PEPP closely to gather additional genetic material outside of the NAR in addition to plants found in the NARs to have good representation of as many founders of all plants species targeted for restoration. In Kipahoe NAR, staff continues to augment the rare plant populations through outplanting. Ungulate control in the 2,418 acre Wright Road unit of Puu Makaala has been completed and augmentation of rare species populations continues as well as ongoing weed suppression. Noxious weed control is second only to ungulate control in addressing threats to the Rare Plant Outplanting Program.

The primary focus of the Lyon Arboretum Micropropagation Laboratory (Lyon) is to prevent further extinction of Hawaii's native plant species mainly through the use of *in vitro* propagation (tissue culture). This project uses Lyon as a propagative and designated living germplasm

facility, emphasizing the propagation of the PEP species. The two main activities accomplished within the laboratory are propagation and multiplying all of the submitted plant samples for the purpose of restoration/reintroduction, and to maintain a sufficient representation of “living” plant germplasm, which will be reside as *in vitro* cultures. The work will be conducted in accordance and alignment with the DOFAW’s efforts to pursue genetic coverage for Hawaii’s critically endangered plant taxa, which includes capture of the maximum genetic diversity remaining in wild populations. The micropropagation inventory currently consists of 16,268 native Hawaiian plants that are maintained primarily as *in vitro* germplasm culture collections at three locations: Lyon, its adjacent greenhouse, and at the Magoon Facilities.

For additional information about Rare Plant Species Restoration and Protection, please go to <http://hawaii.gov/dlnr/dofaw/rare-plant-conservation>.

2. COMPLIANCE WITH CHAPTER 42F, HRS, REQUIREMENTS FOR GRANTS AND SUBSIDIES

No grants or subsidies were issued pursuant to Chapter 42F, HRS.

3. ANALYSIS OF THE PROBLEMS AND ISSUES ENCOUNTERED

Protecting natural areas and ensuring the future of rare native ecosystems and species requires sustained management actions as described above. Actions such as weed and feral animal control and fire prevention must be conducted over the landscape as feral goats, pigs, deer, and sheep, invasive weeds, and fires do not recognize ownership boundaries. The emergence of watershed partnerships on every island has contributed greatly to the state, federal and private partners’ ability to appropriately manage these large forested areas. However, coordinating and assisting the conservation efforts of these partners presents challenges and adds additional responsibilities on the already understaffed NARS crews.

Still, with short-term federal and state funding, the NARS Program has been able to partner with the Pacific Cooperative Studies Unit of the UH to supplement important NARS management work and to assist in the coordination of watershed management actions, including invasive species control, fence construction, field surveys, and rare plant collection, propagation, and outplanting. This partnership with UH is critical, providing learning opportunities to young professionals in the biological sciences, and giving the State much-needed assistance with on-the-ground conservation. In addition, partnerships with other landowners and volunteers provide another method by which NARS Program is working to meet conservation needs.

Act 156, Session Laws of Hawaii 2005 (Act 156), amended Section 247-7, HRS, to explicitly provide that monies in NARF could be used for management of NARS. At the same time, Act 156 increased the Conveyance Tax allocation to NARFS, and in the process, increased revenues into NARF. In FY 08, DOFAW’s NARF budget for NARS management was increased to \$2.6 million. A portion of these funds was earmarked to fund 22 temporary and one permanent state positions, to support needed on-the-ground fieldwork in NARS and to increase coordination with the watershed partnerships. By the end of FY 08, all but one of the new positions had been filled, significantly increasing the capacity of NARS to conduct on-the-ground management.

With the slowdown in the economy and predicted drop in conveyance tax revenues going into the NARF, all programs supported by the NARF will have to be cut back and reduce scale and scope of management activities over the next biennium.

Controlling the threats of invasive weeds and feral animals remains a challenge. Feral animals damage native vegetation, destroying habitat for endangered species, contributing to erosion, and damaging watershed capacity. At the landscape level, control of feral animals is possible using a combination of public hunting, exclusion by fences, staff control and aerial shooting. Building and maintaining fences, although effective, is very expensive. However, a majority of the public does not understand the connection between feral ungulates and damage to native forest and watershed – raising objections to both fencing and animal control as unnecessary. Invasive weeds modify habitat and require constant effort and vigilance to combat effectively. With the dedicated funding provided by NARF, it is anticipated that many of the management needs of NARS can begin to be addressed on a consistent, ongoing basis.

4. STATUS OF PUBLIC HUNTING OPPORTUNITIES

Under the NARS Management Policies, strategies to reduce populations of non-native animals to the lowest possible level are to be employed. Public hunting continues to be the primary control option in many areas within NARS, although hunting is not managed on a sustained-yield basis. Animal control methods (including fencing, trapping, staff hunting, snaring, and aerial shooting) are used as needed in specified areas where public hunting is not able to reduce population/activity to the lowest possible level.

5. FINANCIAL REPORT

NARS is financially supported partly through the general fund under program LNR-407 (see Table A). In FY 08, general fund expenditures were \$809,105 in personnel costs and \$383,637 in operational costs, totaling \$1,192,742. This funding was supplemented by federal grants on a project-by-project basis and by state special funding from the NARF, which is reported on page 21.

6. PLANS AND MANAGEMENT OBJECTIVES FOR THE NEXT FISCAL YEAR

Where appropriate, reserve management activities will be guided by management plans. Plan implementation will focus on preventing, eliminating or controlling the spread of non-native plants and animals that have a detrimental effect on native ecosystems. Other management considerations will include monitoring, research, public education, and volunteer support. Statewide partnerships (particularly watershed partnerships) will continue to play an important role in the management of the reserves, with resources shared to manage across property boundaries.

Plans and management objectives for the next fiscal year include continued work on pending fencing projects; continued collaboration with watershed partnerships to cooperatively manage areas on a landscape level; continued control and removal of feral animals; continued control of habitat-modifying invasive species; update of individual reserve management plans, and the implementation of the recently completed strategic plan. In addition to regular management activities, several specific projects will be initiated this year, in part due to the Legislature

providing state funding for temporary NARS positions.

Hawaii: In FY 09, the NARS Program on the Island of Hawaii will continue the process to update the management plan for Manuka NAR, including collaboration with other interested DLNR divisions; continue cooperation with USGS-Hawaiian Volcano Observatory to monitor the current lava flow within Kahaualea NAR; continue to work with the Three Mountain Alliance to advance management goals in Puu Makaala NAR including invasive species control, rare plant work, and protection of native habitat; continue to work with the Kohala Watershed Partnership to implement the partnership management plan; continue participation in the Hawaii Experimental Tropical Forest, particularly as it overlaps with Laupahoehoe NAR; complete an archaeological inventory survey for Mauna Kea Ice Age NAR and continue collaboration with OMKM for addressing management needs there; continue an active outreach and education program; continue an active rare plant restoration program; and repair and maintain existing infrastructure (management cabins).

Maui: In FY 09, the NARS Program on Maui will continue working to protect Hanawi NAR through fence inspection, maintenance, and cyclic replacement, ungulate control, weed control, and rare species monitoring, in cooperation with EMWP and the Maui Forest Bird Recovery Project; continue construction of fencing at Kanaio NAR and initiate updating its management plan; conduct fence inspection and maintenance of the boundary fence at Kahakuloa NAR and removal of animals, in cooperation with the WMMWP; continue to work with the Molokai Pig Hunters Association to remove animals from the fenced mauka unit in Puu Alii NAR in cooperation with the National Park Service, and continue construction of the next phase of fencing; continue aerial shooting of large feral animal (particularly goat) populations on the north shore of Molokai; continue implementation of the 2-Year Action Plan for Ahihi-Kinau (maintaining closed areas, conducting monitoring surveys, and preparing an updated management plan in coordination with the Ahihi-Kinau Advisory Group); and complete participation in the development of a protocol for rat eradication for use on offshore islets and in NARS.

Oahu: In FY 09, the NARS Program on Oahu will complete construction of fencing in Pahole NAR; initiate planning of boardwalk replacement at Kaala NAR; continue planning for the construction of a predator-proof fence at Kaena Point NAR (<http://www.state.hi.us/dlnr/dofaw/kaena/index.htm>) and continue monitoring for small predators; continue the process for formally adding the upper portion of Poamoho section of Ewa Forest Reserve into NARS; continue to work with United States Army in the Makua mitigation process; continue implementation of the successful rare plant program; and continue monitoring of seabird populations at Kaena Point.

Kauai: In FY 09, the NARS Program on Kauai will initiate the update of management plans for Kuia and Hono O Na Pali NAR; complete fencing in Kuia NAR; conduct weed and rare plant monitoring in Kuia and Hono O Na Pali NAR; continue implementation of the successful rare plant program; continue the process for formally adding a portion of the Na Pali-Kona Forest Reserve into NARS; collaborate to support activities by the Kauai Watershed Alliance; and expand an outreach and education program.

NATURAL AREA PARTNERSHIP PROGRAM (NAPP)

1. DESCRIPTION OF ACTIVITIES AND ACCOMPLISHMENTS

This innovative Program, established by the Legislature in 1991 through Act 326, provides state-matching funds on a 2:1 basis with private funds for the management of natural resources on private lands permanently dedicated to conservation. This Program complements the existing NARS by providing long-term protection and management of unique natural resources on private lands.

NAPP provides financial support for a full range of management activities to protect, restore and enhance significant native resources and geological features. NARS staff administers NAPP, although the private applicant actually carries out all on-the-ground activities. Six-year, long-range management plans provide funding and direction for each NAPP preserve. Since 1993, a portion of the Conveyance Tax, which is levied each time real estate property in Hawaii is bought or sold, has funded the Program. For more information on NAPP, see <http://hawaii.gov/dlnr/dofaw/napp>.

PUU KUKUI WATERSHED PRESERVE

Landowner:	Maui Land & Pineapple Co.
Managing Partner:	Maui Land & Pineapple Co.
Entered NAPP:	FY 94

With over 8,304 acres, the Puu Kukui Watershed Preserve forms the core of regional protection efforts of the WMMWP's 48,000 contiguous acres. Fourteen native natural communities, two of them rare, are found in the preserve along with over 40 rare plant species and six endemic species of land snails. In FY 08, accomplishments included maintaining 40 percent of the preserve as ungulate-free for five or more years, continuing ungulate control where ungulates remain (41 pigs removed by public hunters, 40 by staff), installing additional fencing with WMMWP and DLNR-NARS crews, inspecting and maintaining existing fencing, monitoring of alien threats, invasive weed control, and rare species protection and restoration out-plantings in cooperation with the PEPP.

Goals for FY 09 include adding an additional 3,307 acres of conservation lands to the Preserve, increasing the existing level of management, continuing to increase the acreage in the Preserve that can be considered ungulate-free by installing additional 8' fences for Axis deer exclusion, continuing to offer monthly volunteer service trips for the Maui community, and continuing to participate and provide leadership in the WMMWP, the Maui ISC and the Coordinating Group on Alien Pest Species (CGAPS).

KANEPU'U PRESERVE

Landowner:	Dole Food Company, Inc.
Managing Partner:	TNC
Entered NAPP:	FY 92

The Kanepuu Preserve on Lanai comprises 590 acres in seven distinct units and represents the last major remnant of a dry land forest community, which once covered large portions of Maui,

Lanai, Molokai, and Kahoolawe. Ten rare plants, six of them federally listed, have been reported from the Preserve. A subcontractor has assisted in management of the Preserve. TNC Maui-based staff also assisted with work in Kanepuu on occasion during FY 08. Protection from axis deer, control of non-native plant species, and fire prevention are the primary management activities. The primary management accomplishments in Kanepuu Preserve during FY 08 included: 1) 44 contractor and volunteer hunts were conducted with 48 deer and 2 mouflon sheep removed; 2) Regular monthly fence maintenance, repair and inspections of Kanepuu and Kahue boundary fences were completed; 3) A .55 mile (890m) new section of fence was installed between Kanepuu entrance and Lapaiki iki fence line; 4) Intensive weed removal inside and around the two small enclosures, Lapaiki and Kanepuu iki, was conducted - weeds removed include Christmasberry, lantana, guinea grass, koa haole and other invasive species; and 5) Several miles of fire breaks were routinely mowed and maintained to prevent potential fire damage.

In FY 09, TNC plans to continue contracting and/or granting funds to carry out ungulate control, fence maintenance, weed control and improving a public self-guided nature trail.

KAPUNAKEA PRESERVE

Landowner:
Managing Partner
Entered NAPP:

Pioneer Mill Company, Ltd.
TNC
FY 92

This 1,264-acre preserve is a component of regional protection efforts for the important watershed and native ecosystems found in the West Maui Mountains. Kapunakea Preserve's upper elevations are recognized as among the highest quality native areas in the State, containing 11 native communities, 34 rare species of plants (10 federally listed), and four rare snail species.

Beginning in September 2006, TNC began subcontracting essential stewardship activities in the Kapunakea Preserve to the WMMWP work crew. During FY 08, the WMMWP was again contracted to support animal control and monitoring, conduct an annual aerial weed survey, maintain infrastructure, and provide occasional access to researchers. In addition, TNC, using privately raised funds, contracted the New Zealand based company Prohunt to test a helicopter assisted animal control methodology and Global Positioning System (GPS) tracking of animals to test the integrity of fences and natural barriers. The primary management accomplishments for Kapunakea Preserve in FY 08 were: 1) 24 pigs were removed; 2) Five pigs were translocated from the preserve to areas outside the preserve and tracked with GPS collars; 3) 10 pigs outside the preserve were eartagged and released to assess pig movements through fences and topographic features; 4) Ungulate activity transects were monitored; 5) Fences were inspected quarterly with improvements made totaling 265 meters; 6) Aerial surveys were conducted to locate strawberry guava (*Psidium cattleianum*) outliers and to monitor any pig activity; 7) 54 strawberry guava were treated and outliers were pulled to prevent expansion into pristine areas; and 8) TNC served on the WMMWP Executive Committee and supported funding and watershed activities.

In FY 09, TNC plans to continue contracting with the WMMWP to carry out ungulate control, fence maintenance, weed control, and other routine management activities.

PELEKUNU PRESERVE

Landowner:

TNC

Managing Partner:
Entered NAPP:

TNC
FY 92

The Pelekunu Preserve, located on the north shore of Molokai, is a 5,759-acre preserve and established to protect the free-flowing Pelekunu Valley stream system, is one of the best in the State. It is also part of a larger regional management effort that provides protection to over 22,000 contiguous acres on Molokai. Pelekunu Stream contains nearly all the native Hawaiian freshwater fish, crustacean, and mollusk species. In addition, 28 rare plants, six endemic forest birds, and two endemic land snail species have been reported from the area. Protection of the watershed by reducing ungulate damage and reducing the spread of non-native plants are the primary management activities. Feral ungulate control and monitoring in the back portion of the preserve remained the primary focus in FY 08. Public hunting continued to be utilized through the Molokai Hunting Working Group. During FY 08, 58 pigs were removed through ground hunting. Additionally, using privately raised dollars, TNC engaged and tested the methods and tools of two New Zealand organizations, Prohunt and Landcare Research, to apply and evaluate new monitoring and contract hunting methods in a variety of native ecosystems in TNC preserves and limited partnership areas. Projects included monitoring of 55 feral animals statewide to evaluate their movements and activity levels in remote areas, and to determine effectiveness of fences and other topographic barriers. Projects also included strategic ground hunting using a helicopter to shuttle hunters to control areas. The projects are expected to wrap up in FY 09. Public outreach programs continued with the support of interns and summer youth programs.

In FY 09, management efforts will focus on further reducing ungulate populations to improve protection of the Preserve from ungulate damage. TNC will evaluate their existing ungulate control program and modify it based on results of the Prohunt project. Weed control efforts will focus on manual control of habitat-modifying weeds like the African tulip tree and investigating control methods for *Clidemia hirta*. Community outreach efforts will continue with public lectures, preserve overlook hikes, and summer youth programs.

KAMAKOU PRESERVE

Landowner:
Managing Partner:
Entered NAPP:

Molokai Ranch, Ltd.
TNC
FY 95

The 2,774-acre Kamakou Preserve helps increase regional protection efforts for the important watershed and native communities found in East Molokai. Forty of the plant species are rare, of which 23 are listed as federally endangered. In addition, the Preserve protects habitat for five native forest bird and five rare native land snail species. The primary management focus is to prevent degradation of the native forest by reducing feral ungulate damage, limiting the spread of non-native habitat-modifying plants, and preventing wildfire. Since 1998, feral ungulate control activities have utilized volunteer hunters from the Molokai community. Staff and volunteers control non-native plant species and assess management efforts by monitoring transect. Review of alien species prevention protocols with staff, hikers, hunters, volunteer groups, and researchers remains an ongoing activity. These protocols are communicated through direct contact and public outreach programs, including displays at Hoolehua Airport. In FY 08, feral ungulate control activities included: implementing the Prohunt/Landcare contracts, staff hunting (resulting in 4 pig and 1 goat capture), live pig trapping (resulting in 54 captures), and volunteer hunting from the Molokai community. Staff and volunteer groups removed *Clidemia*, passionfruit, strawberry guava, New Zealand flax, black wattle, Christmas berry, rose, ginger, Karakanut, and blackberry

in the preserve. TNC staff provided logistical support for several research projects conducted in the preserve. Public outreach programs continued to be important both on- and off-site.

For FY 09, completing the Prohunt/Landcare contracts, staff hunting and live trapping of pigs will be the focus of ungulate control efforts. Additionally, staff and volunteer time will be spent on controlling habitat-modifying weeds in the preserve. Other activities will include supporting researchers and conducting community outreach.

MOOMOMI PRESERVE

Landowner:	TNC
Managing Partner:	TNC
Entered NAP Program:	FY 95

This 921-acre preserve on the northwest shore of Molokai contains one of the largest and best remaining dune ecosystems in Hawaii. Moomomi contains eight rare plant species and one rare native plant community. Green sea turtles, wedge-tailed shearwaters, Laysan albatrosses, and Hawaiian monk seals are known to use the area. In addition, Moomomi contains significant archaeological, paleontological, and cultural resources. In FY 08, trapping of feral cats, mongoose, and rats provided for safer nesting grounds for the steadily increasing population of wedge-tailed shearwaters. Non-native plant control focused on removing kiawe. Community outreach programs included preserve hikes and off-site activities.

In FY 09, TNC will continue with kiawe removal efforts, continue a monitoring project to measure the impact of deer in the preserve, and continue to conduct predator control and monitoring of the wedge-tailed shearwaters' nesting colony. Community outreach and support of research projects will continue.

WAIKAMOI PRESERVE

Landowner:	Haleakala Ranch Company
Managing Partner:	TNC
Entered NAP Program:	FY 95

The 5,230-acre Waikamoi Preserve helps increase regional protection efforts for the important watershed and native species habitat found in the EMWP area. Twelve bird species have been reported from Waikamoi, including seven federally endangered species. Fourteen native natural communities, two of them rare, are found in the Preserve along with 35 rare plant species. Management activities during FY 08 were primarily focused on ungulate removal with the goal of zero tolerance. Such goals were established through a joint three-year project (termed "Go Deep") with EMWP. Go Deep focuses on ungulate removal in a 12,000 acre core area that includes Waikamoi Preserve and adjacent EMWP lands. In addition TNC, at its own expenses, contracted the New Zealand based company Prohunt to test a helicopter assisted animal control methodology and GPS tracking of animals to test the integrity of fences and natural barriers.

Major accomplishments for FY 08 included: 1) Thousands of priority invasive plants (kahili ginger, gorse, and tropical ash) were surveyed and controlled; 2) A rare plant survey sponsored by TNC-Maui was conducted in the Koolau Forest Reserve (lower EMWP area) documenting new locations for 17 rare plant species, many endemic to East Maui including a very rare fern (*Christella boydiae*) greatly expanding its range from a former small range in Kipahulu Valley; 3) 65 pigs were removed within the preserve; 4) One deer was removed from the Deer

Management Unit by TNC staff; 5) All existing trails, landing zones, and camps were improved; 6) 16 miles of fences in the preserve were inspected and all repairs were completed; 7) Additional fence sections were added at 3 locations determined to be porous; 8) Prohunt began operations in October 2007 and completed operations in March 2008; 9) TNC staff assisted Prohunt in planning, logistics and animal control throughout the period removing 54 pigs (these numbers included in above totals) from the preserve and adjacent areas, including nine pigs were translocated from Waikamoi to areas outside the Preserve and tracked with GPS collars to test natural barrier effectiveness; 10) Seven pigs were trapped inside the Preserve, eartagged and released to assess pig movements; 11) Ungulate transects in Units 1A, 1B and 2 were monitored prior to and after Prohunt activities in the preserve; and 12) TNC chaired the EMWP Executive Committee and supported funding and watershed activities.

In FY 09, TNC plans to complete the joint three-year project (termed "Go Deep") with the EMWP bringing ungulate damage down to as low a level as possible.

KAU PRESERVE

Landowner:	TNC
Managing Partner:	TNC
Entered NAP Program:	FY 07

Newly enrolled in the NAPP Program in FY 07, TNC's 3,511-acre Kau Preserve protects four native-dominated natural communities, one of them rare, along with over a dozen rare plant species and one of the State's richest assemblages of rare forest birds. The four separate units that make up the Preserve (Kahilipali, Kioloku, Keaiwa, and Kaiholena), are contiguous to the State's Kau Forest Reserve and are positioned on the southeast flank of Mauna Loa Volcano within one of the largest areas of intact forest land in the State. In FY 08, subcontractors completed the Kaiholena fence that protects ~1,200 acres of native wet forest from the destructive effects of ungulates. Although still dominated by native plants in most areas, the forests of Kau continue to be degraded by ungulates and invasive weeds, such as strawberry guava, which are dispersed by ungulates. Ungulate control efforts continue inside the fenced unit. TNC staff continues to work with local hunters, agency partners and other private landowners to enhance hunter access to the Kau forest. TNC staff also finalized the Kau Preserve weed plan, and continues to assist the Three Mountain Alliance with the production of a comprehensive weed plan for the Three Mountain Alliance Kau-Kapapala Management Area. With few ungulates remaining inside the fenced unit, weed removal efforts have increased on the preserve. Staff continues to support the production of a Kau watershed management plan which will address issues such as public access, invasive species control, native species protection, and fire prevention and control.

In FY 09, TNC will maintain the new fence, and continue ungulate control efforts inside the fenced unit. Once the fenced area is free of ungulates, TNC will begin outplanting rare, threatened, or endangered species collected from the region. Efforts to control high priority invasive plants will increase both on the preserve and across the Three Mountain Alliance watershed management area. Targeted outreach efforts will include programs for hunters and their families, as well as local schoolchildren.

2. COMPLIANCE WITH CHAPTER 42F, HRS, REQUIREMENTS FOR GRANTS AND SUBSIDIES

Due to legislative amendments, Chapter 42F, HRS, is no longer applicable to the types of grants issued under the NAPP Program. All grants awarded as part of the NAPP Program are compliant with the State Procurement Code, Chapter 103D, HRS.

3. ANALYSIS OF THE PROBLEMS AND ISSUES ENCOUNTERED

Natural resource protection and management are long-term efforts requiring time and energy commitments not often found in other projects. Restoration projects often take years before results are discernable. Several of the projects funded this year under NAPP could take years to achieve the desired objectives. It is important to note that management and protection of natural areas, watersheds and native ecosystems need to continue for the long term. With the recent slow down in the economy and the predicted drop in conveyance tax revenues going into the NARF, NAPP funding and activities may need to be reduced or delayed and future expansion of the program put on hold until revenues recover.

Partnership and community-based management programs have proven to be an effective tool for leveraging funds and securing stakeholder participation and commitment. Such initiatives also require a concerted effort and often take a long time to establish and implement. NAPP-funded preserves typically form the core of conservation partnerships, in part due to the dedicated state funding. To help with organization, facilitation, and implementation, partnership steering committees, community advisory councils, and facilitated working groups have been established to help management partners address local concerns now and in the coming years.

4. STATUS OF PUBLIC HUNTING OPPORTUNITIES

On Molokai, the status of public hunting opportunities varies depending on the preserve. Due to safety concerns and the limited resources for administration and enforcement, TNC does not offer a public hunting program at the Moomomi Preserve. In the event studies indicate that major control work needs to be conducted on the deer population, TNC will pursue management in the best interest of the resources. Kamakou Preserve is open for public hunting when it is compatible with management programs and in accordance with the regulations of the adjoining Puu Alii NAR. At this time, the NAR and the Preserve are open year-round to hunting of pigs, goats, and axis deer, without a bag limit. During times of extreme fire hazard, unsafe road conditions, or herbicide spraying in areas accessible to the public, portions or all of the preserve may be closed. Pelekunu Preserve continues to utilize staff-organized volunteer ground hunts through the Molokai Hunting Working Group.

On Maui, the status of public hunting opportunities also varies depending on the preserve. At Puu Kukui, the Preserve is open to public hunters by permit 365 days a year, with no bag limit. Limited volunteer hunting opportunities are available at the Waikamoi Preserve. The conservation easement between TNC and Haleakala Ranch allows ranch employees to hunt. Public hunters willing to follow TNC guidelines will be allowed to hunt in Unit 1A of the Preserve on a limited basis (when hunting will not interfere with ongoing management activities, planned guided hikes, and hunting by ranch employees). However, it should be understood that the goal is to remove all ungulates in the Preserve, and no area within Waikamoi Preserve will be

considered a sustained yield hunting area. In addition, there are approximately 50,000 acres available to public hunters below the Preserve to meet public hunting needs.

The conservation easement between TNC and Amfac/JMB Hawaii, L.L.C. requires that there be no unaccompanied public hunting in the Kapunakea Preserve. Kapunakea Preserve is closed to hunting with dogs due to an increased snaring effort in the preserve due to dramatic increases of pigs in previously hunted areas. However, TNC may accompany public hunters hunting without dogs upon request, on a case-by-case basis. Limited public hunting opportunities that will not interfere with other management are available in coordination with scheduled work trips.

On Lanai, TNC utilized volunteer hunts as a method to remove remnant deer from the fence enclosure units. On Hawaii Island, TNC will continue to utilize volunteer hunters to reduce animal numbers within the Kau Preserve and will continue to investigate ways to enhance hunter access into Kau forest.

For additional information on the NAPP, please go to <http://hawaii.gov/dlnr/dofaw/napp>.

5. FINANCIAL REPORT

NAPP is supported primarily through NARF. In FY 08, state expenditures were \$1,043,591. As NAPP provides matching funds on a 2:1 basis, these state funds were matched by at least \$521,796 private funds. In actuality, NAPP participants typically provide additional matching dollars for conservation, through additional private funds or through acquisition of federal grants.

6. PLANS AND MANAGEMENT OBJECTIVES FOR THE NEXT FISCAL YEAR

NAPP preserve management activities in FY 09 will be guided by completed, BLNR-approved management plans. Plan implementation will focus on eliminating or controlling the spread of non-native plants and animals that have a detrimental effect on native ecosystems. Other management considerations will include rare and endangered species protection, monitoring, research, public education and generating community support. Goals for individual preserves are discussed above.

FINANCIAL CONDITION OF NARF

NARF receives revenues from the Conveyance Tax (25% of total Conveyance Tax revenues) on real estate transactions. The cash balance of the NARF at the beginning of FY 08 was \$21,021,609 with prior year encumbrances of \$4,598,259. FY 08 NARF revenues were \$10,494,889 with \$9,602,005 from the Conveyance Tax, \$885,704 from the investment pool and \$7,180 from miscellaneous (See Table B).

FY 08 expenditures totaled \$8,072,453 representing expenditures of approximately \$4,211,353 for FY 07 encumbrances, and \$3,861,110 of FY 08 encumbrances. Of the FY 08 \$8,653,761 spending cap, all operating funds were encumbered. Outstanding FY 08 encumbrances totaled \$4,488,761.

The cash balance of the NARF at the beginning of FY 09 was \$15,670,491 with \$11,181,730 as the available cash balance. FY 08 revenues were only 46% of the record FY 06 revenues and

84% of FY 07 revenues. Projections are for revenues to drop significantly in FY 09 due to a weakening real estate market along with the economic downturn in general. The resulting decrease in real estate transactions has resulted in reduced Conveyance Tax revenues for the first three months of FY 09, with the projected FY 09 revenues for NARF is \$6,481,514 or 68% of last year's revenues.

NARF also supports other programs and projects, some of which are administered by DOFAW:

FY08 legislatively authorized transfers and expenditures totaled \$7,773,554 which were: \$2,178,115 to the Forest Stewardship Fund through direct transfers authorized by last year's legislative appropriation; \$2,850,000 to the Hawaii ISC through direct transfers authorized by previous years legislative appropriations for invasive species; \$2,640,000 for the Kula (Maui) Forest Reserve Restoration Project authorized by last years legislative appropriation; and \$105,439 to DLNR Fiscal Office for an accountant authorized by last year's legislative appropriation. These are reported on in their respective legislature reports.

FY 09 legislatively authorized transfers totaling \$6,073,115 are scheduled to include: Forest Stewardship Program (\$600,000) through direct transfers pursuant to Section 247-7, HRS; Forest Reserve Projects (\$1,878,115); Hawaii ISC (\$3,000,000) through previous legislative appropriations for invasive species; Kula Forest Restoration Project (\$475,000); and DLNR Fiscal Office for a budget analyst and associated support (\$120,000).

**OTHER PROJECTS FUNDED BY THE NATURAL AREA RESERVE FUND
PURSUANT TO SECTION 247-7, HRS: WATERSHED PARTNERSHIPS PROJECTS
& HAWAII YOUTH CONSERVATION CORPS**

1. WATERSHED PARTNERSHIPS PROJECTS

Watershed Partnerships Program

Since 1991 when the first watershed partnership was formed in East Maui, public and private landowners have increasingly realized the benefits of working together to ensure the conservation of a shared watershed whose forests form the sponge that allows billions of gallons of fresh water to refill our aquifers. Today, nine watershed partnerships are innovative and effective alliances of public and private landowners committed to the common value of protecting forested watersheds for water recharge and other ecosystem services through collaborative management actions. The benefits of managing our most mauka lands under watershed partnerships are many: 1) Actions address threats affecting core watershed areas, habitats and species across multiple landownership boundaries; 2) Limited state funds are leveraged to obtain federal, county and private funds (with \$2.6 million partnerships have leverage an additional \$3.9 million in FY 08); 3) Resources and expertise are pooled to reduce redundancy; 4) Landowners, particularly private, increase their capacity to engage in watershed protection; and 5) Other ecosystem services are provided such as culture, education, native habitats/species preservation, recreation, and jobs.

There are nine watershed partnerships in the State (Maui-3, Molokai-1, Kauai-1, Hawaii-2, Oahu-1, and Lanai-1) involving over 50 private landowners and 24 public agencies that cover

close to 1.6 million acres (a third of the State's land base). In the past year, the Olaa-Kilauea Partnership increased in size from 400,000 to over 1 million acres. Under a new MOU they have changed their name to the Three Mountain Alliance reflecting the new partnership lands on Mauna Loa, Hualalai and Kilauea. In addition, landowners on Mauna Kea and in the Waianae Mountains are in the initial stages of forming two new partnerships. With these additions, all major forested mountains in the islands will be covered by partnership agreements. All watershed partnerships have management plans, which guide management actions and provide clear objectives and goals for future outcomes and achievements. Most management actions revolve around combating the main threats facing watersheds - feral ungulates and invasive species. Examples of management actions include ungulate removal and fencing, invasive species control, forest health monitoring, outplanting and restoration, rare species management, and education and outreach. DOFAW provides technical and financial resources to support the watershed partnerships through its Watershed Partnerships Program, which is funded by NARF and managed under the NARS Program.

Highlights of Watershed Partnership Activities, Accomplishments, and Challenges in FY 08, Plans and Management Objectives for FY 09

The 2007 Conveyance Tax funds allowed for continued grant funding to the watershed partnerships of \$2.6 million which was awarded in FY 08 to support major on-the-ground watershed management activities under the watershed partnerships on five islands covering over 1.6 million acres. Matching funds generated by the awarded state funds totaled \$3.9 million or 60% of the total spent. These grants are still active and will not be concluded until May 31, 2009 so reports below indicate interim status of expenditures and work progress. In addition to the \$2.6 million in grants, \$625,000 was allocated for additional temporary positions to assist with coordination and watershed management on forest reserve and partnership lands. In FY 09, a total of \$3.7 million is budgeted to support expansion of watershed management initiatives under the Watershed Partnerships Program as well as fund new initiatives to enhance broader watershed management activities across the Islands of Kauai, Oahu, Maui, Molokai, and Hawaii.

Kauai Watershed Alliance (KWA)-144,004 total acres

In FY 08, a total of \$260,368 was awarded to KWA through the Watershed Partnerships Program Grant (WPPG). The funding provided also leveraged an additional \$668,000 for the project. The award supported management of priority weeds in core watershed areas including aerial mapping and Geographic Information System (GIS) database analysis, ground control, and testing of new technologies to target Australian tree fern in inaccessible terrain and environmental regulatory compliance preparation (including biological surveys, cultural assessments, and outreach) for the protection through fencing of 2,000 acres of high quality watershed area in the Alakai. Significant advances made during this reporting period include:

- Implementing a more efficient survey and treatment strategy for target weeds in the relatively pristine core management units and the database modifications to track this new strategy
- Identification of a vastly superior herbicide formulation for foliar treatment of Australian tree fern
- Development by helicopter contractor of a custom aerial spray apparatus for Australian tree fern control

- Contractual agreement with remote sensing contractor to acquire very-high resolution aerial imagery and weed distribution maps

For FY 09, KWA was awarded \$294,190 to complete the EA for and begin construction of the Alakai Fence (4.48 miles/2,000 acres), install weatherports and radio repeaters, complete survey and treatment of priority invasive weeds (kahili ginger, Australian tree fern, and strawberry guava), conduct a campaign to control ungulates in 3,700 acres of Wainiha Valley and 1,850 acres of the Alakai Plateau focusing on areas protected by fencing and geographic barriers, and to establish ungulate and vegetation monitoring transects in 5,500 acres in Waihiha and the Alakai.

Koolau Mountains Watershed Partnership (KMWP) – 98,737 total acres

In FY 08, a total of \$350,541 was awarded to KMWP, which was matched by \$214,400 to conduct priority area weed management, restoration, stream management, and ungulate control over 16,000 acres in the KMWP. Major management actions include completing a site based and landscape level weed inventory to guide management actions, weed removal, restoration of degraded areas with native plants, development of an ungulate management plan, and a pilot project for creating a stream management system.

Interim progress and challenges include:

- A total of 10,685 summit acres have now been surveyed and mapped for weeds; 4,168 individual weedy trees were removed since January 2008 for a total of almost 17,000 trees since work began
- Outplanted native plants at the Manana fire restoration site and regrowth of vegetation after the burn continue to be monitored; volunteers provide weed control and outplanting
- An ungulate management specialist was hired and a draft management plan is under review. Feasibility test for new control techniques such as corral traps are under way
- Inaccessibility to summit areas due to poor weather is being overcome by planning and permitting for new field infrastructure - a cabin and landing zone

For FY 09, KMWP was awarded \$227,514 matched by \$277,000 of outside funds to finalize priority rankings for summit and windward management areas for weed control, remove weeds in 3,000 priority acres; survey and control *Melochia* in Punaluu, conduct surveys for *Miconia* and *Medinilla*; finalize permitting requirements for field infrastructure, construct a field cabin, improve landing zones; complete an ungulate monitoring plan and GIS maps, work with the community on volunteer hunts; control feral goat populations in Kaaawa, establish 121,000m of ungulate transects and assess vegetation; lead volunteer work trips to remove invasives from the Manana burn site and compile data from monitoring plots, install two water quality stations and dataloggers along Poamoho Stream, and link these stations to the DOFAW data portal.

East Molokai Watershed Partnership (EMoWP) – 32,983 total acres

In FY 08, a total of \$90,000 was awarded to EMoWP, which matched with an additional \$410,000 for the project. Feral animal control activities include fence surveys, aerial shoot missions for feral goats, helicopter assisted ground hunts for feral goats and pigs, and maintaining pig traps. Crews conduct ground surveys and removal sweeps for invasive weeds such as blackberry, strawberry, and New Zealand flax, *Clidemia*, paperbark and *Tibouchina*. The

partnership also facilitates the Molokai Fire Task Force.

For FY 09, EMoWP was awarded \$124,740 to maintain seven miles of fence, conduct quarterly surveys for the 1400-acre Kamalo/Kapualei fenced unit, assist with Makolelau fence construction, quarterly ground hunts above the fence, monthly ground hunts below the fence, live trapping in Kamakou Preserve, implement goat collaring, baying dogs, GIS mapping, and goat trapping; survey and control all priority weeds (strawberry guava, blackberry and *Clidemia*) in 2,100 forested acres and 1,000 buffer acres; assist with early detection surveys and rapid response; conduct Molokai Earth Day celebration and partners' meetings and engage volunteers in 300 hours of ungulate and weed removal.

West Maui Mountains Watershed Partnership (WMMWP) – 48,000 total acres

- » In FY 08, a total of \$297,098 was provided to WMMWP with a leveraged match of \$265,000. Eight miles of fence are annually maintained and inspected along with ungulate monitoring transects and traps, aerial shooting is done quarterly. Information on weeds monitored along transects and weed removal are kept in a database. Fencing continues to be upgraded including the installation of strategic barricades. A workshop helped produce a draft fire action plan. A new website helps promote outreach events held for schools and volunteers. A new office space and base yard was begun.

For FY 09, WMMWP was awarded \$217,500 for maintenance, replacement and inspection of over 12.5 miles of fences protecting 14,083 acres of watershed plus 8,069 acres of plant critical habitat and to deter dirt bike use. Ground based feral animal control will be conducted in relatively animal free and active control areas. Weeds will be managed with a focus on strawberry guava, *Tibouchina*, *Clidemia*, blackberry, *Cortaderia*, and other incipient threats and preventing weed establishment in high traffic areas. Fence and weed information will be added to the database to direct future management. To monitor ungulate disturbance and weed transects, photopoints will be updated, aerial surveys and ground scouting will be conducted. Thermal Cam and Forward Looking Infra Red techniques for ungulate monitoring will be further refined. Outreach will consist of website updates, brochures, signage, events, and hikes. Americorps and YCC will be involved in training.

EMWP – 100,000 total acres

In FY 08, a total of \$417,800 was provided to EMWP with leveraged match at \$327,000. This funding supported feral animal and invasive species control in a 10,000-acre area, over 10 miles of fence maintenance and inspection, new fence construction in Hanawi NAR, aerial shoot missions for feral animal control, monitoring for both feral ungulates and 21,000 acres for invasive weeds, organization of a volunteer hunting program that resulted in the removal of a significant number of animals, school programs and community education events reaching 968 people in 6 months, *Miconia* aerial reconnaissance, and biocontrol application and research focused on strawberry guava baseline growth and release of *Tectococcus ovatus* on banana poka. Current challenges include the delay of the EA for strawberry guava biocontrol and the need for more representation from the hunting community in the partnership.

For FY 08, EMWP was awarded \$417,800 to continue and expand threat abatement and control programs for ungulates and weeds in the 7,000-acre fenced project site including fence and

transect monitoring; inspect and maintain 9,970 meters of fence; improve and maintain hunter check stations, facilitate hunter access to Koolau Forest Reserve; provide public outreach and environmental education programs with a focus on the significance of native watershed areas including presentations, hikes, service trips, and community events; work to establish a voluntary water bill donation program; continue ungulate and weed management in accessible portions of Koolau Forest Reserve; and, initiate fencing in upper Hana Forest Reserve including delineating and flagging 1 mile of fence and the creation of landing zones and camp sites.

Leeward Haleakala Watershed Restoration Partnership (LHWRP) – 43,175 total acres

In FY 08, a total of \$323,405 was provided to LHWRP with a leveraged match of \$1,002,800. The funding has been used to support the planting of 10,000 native seedlings in protected restoration sites resulting in approximately 50-100 acres in a primary restoration phase which will assist in refining methodologies for eventual larger scale restoration. Biological surveys of Kaupo Ranch and Nuu Mauka Ranch were conducted as baseline documentation and in preparation for fence construction. *Septoria* fungus was successfully applied to banana poka as a biocontrol (and is now spreading mauka on its own); an exploratory survey for *Bocconia* biocontrol with field work was conducted and report completed and information disseminated at next conservation conference.

For FY 09, LHWRP was awarded \$343,830 to fence more of the core area (Kaupo-Nuu-Kahikinui), complete archeological and biological surveys and the preparation of an EA, construct the first phase of 1.6 miles of fence at Kaupo-Nuu, inspect existing fences; remove feral cattle from Kahikinui, cooperate with partners to eliminate their feral cattle and prevent future ingress; continue biocontrol of banana poka and bocconia; cooperate with partner agencies in weed control especially for silk oak; monitor vegetation within demonstration exclosures using matching funds, plant an additional 10,000 native plants utilizing volunteers.

Three Mountain Alliance (formerly Olaa-Kilauea Partnership) – 1,116,300 acres

In FY 08, a total of \$464,297 was awarded to the Three Mountain Alliance. Leveraged match for this funding was \$778,800. Grant award supports feral ungulate control, rare plant restoration, invasive weed control, fire management, environmental outreach and education, and restoration over 200,000 acres of the Three Mountain Alliance. Major management actions include maintaining over 14,000 acres of ungulate free area by monitoring, fence inspections and controlling animal ingress to area, removal of feral ungulates from other fenced units, implementing strategic weed control for fenced units, implementing rare plant reintroduction in ungulate free units, conducting annual forest and seabird surveys, seed collection, conducting biological surveys, fencing, establishing basemap and conducting fire risk assessment to identify priorities and recommendations to develop action plan and finalize community wildfire preparedness plan, creating teacher workshops and field based education program targeting students, and public service announcement development.

For FY 09, the Three Mountain Alliance was awarded \$448,320 to maintain 10,900 acres of fenced, ungulate-free units, complete feral animal control on 34,100 acres, and reintroduce rare plants at Olaa-Kilauea, Puu Waawaa (PWW) and Kona Refuge; implement a weed management plan in the 14,000 acre core recovery area, Kona Hema, South Kona and on priority partnerships lands; assist reforestation at Keauhou Ranch (5,000 plants over 20,000 acres) and PWW;

maintain 32 miles of access roads; collect 500,000 seeds; build 1 mile of trail access to rare plant enclosures; mark and clear 10 miles of fence alignment at PWW; provide materials to replace the Kapapala Forest Reserve boundary fence, 16 miles of fence at Puu Makaala NAR, 5 miles at Manuka NAR, and 800 acres Henahena Unit at PWW; assist with the Kau Kapapala Watershed Management Plan; complete annual forest and sea bird surveys; control cattle on forest reserves, provide standards-based teacher workshops, implement secondary environmental education programs for spring/summer breaks, develop 48 radio public service announcements, initiate a volunteer program; and provide outreach at community events.

Kohala Watershed Partnership (KWP) – 68,000 total acres

In FY 08, a total of \$205,700 was awarded with matching funds of 186,300 to conduct feral animal control, invasive weed management and education and outreach over 10,000 acres of Kohala Watershed Partnership lands. Major management actions are erecting 2.5 mile of fencing to protect the last known habitat for rare tree snail, conduct a baseline survey of ungulates and vegetation composition and snail populations, feral cattle and pig removal, field and classroom curricula development, educational day camps, a volunteer program, and field days to involve community members.

For FY 09, KWP was awarded \$235,500. In the Kaneaa-Ponoholo Biodiversity Unit the partners will: enclose the unit with 2.5 miles of fence, helping to control feral cattle movements across property boundaries, reduce the cattle population in unit through ground hunting by staff and partners, curtail movement of cattle into Kohala Forest Reserve, hunt and trap pigs, test natural barriers and strategic fencing options, weed control (strawberry guava, kahili ginger, jasmine) in the lower 100 acres of the unit, track progress with GPS, support graduate student research plots to monitor vegetation recovery. In the Upper and Lower Laupahoehoe Management Units they will: conduct ground and aerial surveys for strategic fencing, and establish additional weed and ungulate monitoring transects. In the Puu Pili Biodiversity Unit they will: begin fencing, control feral pigs in collaboration with Kahua Ranch, control kahili ginger, eradicate strawberry guava, reduce banana poka, and establish four transects.

Evolving New Watershed Partnerships in Waianae and Mauna Kea

In FY 09 funds are being provided to develop full-fledged watershed partnerships in both Waianae and Mauna Kea (\$34,000 each). Partners will draft and sign a MOU and begin to formulate their management plans. This will increase the number of partnerships from 9 to 11. With these partnerships established, every major mountain top in the state will be within a watershed partnership.

Additional projects supporting watershed management activities

In FY 08, the Watershed Partnerships Program continued to assist in funding the network of stream gages found throughout the state that monitor stream levels that provide water quantity data critical to land use and engineering planning in addition to measuring the long term effects of watershed management activities (\$118,175 with a match of \$87,000). Both the rise in costs of these gages and continued cutback in budgets for both DLNR's Commission on Water Resource Management (CWRM) and USGS are putting the statewide gage network at risk for

dismantling. On Lanai \$22,695 has been put toward ungulate removal, invasive weed control, and native plant outplanting as well as outreach and communication regarding values of the watershed and importance of fencing. The Plant Extinction Prevention Program was awarded \$49,140 (match by \$146,360) to monitor known populations of 17 species in danger of going extinct and to collect propagules for genetic storage and potential future reintroduction in the Koolau Mountains.

For FY 09, additional projects funded to support broader watershed management initiatives included assistance to a community-based group working to protect Kipahulu Valley in East Maui for constructing a fence, controlling ungulates and removing invasive weeds (\$33,220) and \$48,896 to continue to support CWRM and USGS statewide gage network.

Challenges

Now that the Watershed Partnerships have begun to create better protection of our mauka forested lands so crucial to our fresh water supply, the State will need to continue to support the work they do despite fluctuations in the economy. The increase in the number of partnerships and additional acres of land within their boundaries will require that the State sustain their funding. Without this protected source of fresh water our economy will not be sustainable. As the Conveyance Tax revenues decline, it will be a challenge to fund these activities that are so critical to the health and economy of the entire state.

For detailed information on watershed partnerships, please go to <http://hawp.org/>

2. HAWAII YOUTH CONSERVATION CORPS AND PUBLIC OUTREACH

An important aspect of DOFAW's education and outreach efforts is the Hawaii Youth Conservation Corps (HYCC), which is partially funded by the NARF. The HYCC has both year round and summer programs.

The summer HYCC and Hana Hou (second year) programs provide training and hands-on learning opportunities for high school and college-aged youth. Summer HYCC participants work in small teams with multiple natural resource managers throughout the State. The 2008 HYCC summer program consisted of 13 teams on five islands including Oahu, Kauai, Maui, Molokai and Hawaii. A total of 149 youth participated - 123 participated as first year participants and 26 participated as team leaders. Twenty youth took part in the Hana Hou Program and worked in a more focused setting assisting only one or two natural resource organizations with their efforts. The summer program lasts six weeks for program participants and seven weeks for group leaders and Hana Hou participants. Hana Hou and group leaders receive an educational award and all participants earn a cash stipend and have the opportunity to earn college credits through UH at Manoa. In 2008, summer HYCC program participants contributed approximately 40,800 volunteer hours on projects including endangered species restoration; trail maintenance, out-planting, species monitoring, and invasive plant removal. View news articles about the 2008 summer HYCC participants:

<http://www.mauinews.com/page/content.detail/id/507233.html?nav=10> and

<http://westhawaiiitoday.com/articles/2008/06/26/local/local01.txt>.

The year-round component to HYCC is operated as an AmeriCorps program. The Program

allows young adults to gain entry-level experience working alongside natural resource managers in the field. The Program was developed with the intent to serve as an extension of the summer HYCC Program and provide more in-depth training for youth interested in pursuing a career working in the natural resource conservation field. In FY 08, DOFAW enrolled a total of 25 full-time members each committing to work for 1,700 hours. In FY 08 HYCC AmeriCorps participants contributed over 42,000 hours of service toward conservation efforts in the state. Conservation projects include invasive species management and removal, fencing, endangered bird restoration, coordinating outreach events, and dryland forest management.

The HYCC Program expanded substantially from FY 07 to FY 08 growing from 72 to 149 youth participants/group leaders, 20 Hana Hou (second year), and from 9 to 25 year-round participants for a total of 194 youth involved in the HYCC Program. DLNR received a nationally competitive grant for FY 09 from the Corporation for National and Community Service to support young people participating in conservation work on the islands. This grant will help to fund 25 full time AmeriCorps members, 120 summer participants, 26 summer group leaders, and 24 Hana Hou participants for three years. In addition DOFAW was awarded 70 AmeriCorps EAP (education award only) minimum time slots, which we will offer to other intern/volunteer program participants for up to 2 months support. For more information on HYCC, please visit the website at <http://www.hawaiiyc.com>. Other partners supporting the program include Kamehameha Schools, UH-Pacific Cooperative Studies Unit, the Hawaii Department of Health, Clean Water Branch and the United States Environmental Protection Agency, among others.

During FY 08, DLNR published two editions of the DOFAW biannual newsletter “Na Leo O Ka Aina.” Electronic and printed versions were created. Printed copies were sent primarily to schools, libraries, other agencies and individuals who requested the printed version. One copy is sent to every elementary, middle, and high school and to every public library in Hawaii. Overall, approximately 2,000 newsletters were distributed throughout the United States.

An additional outreach component for DOFAW includes maintaining the Division’s website to provide up-to-date information and resources about the many DOFAW programs and service. During FY 08, DOFAW started transitioning the website over from www.dofaw.net to <http://hawaii.gov/dlnr/dofaw>.

During FY 08, DOFAW worked in partnership with DOE to produce a teacher’s manual for natural resources education that meets current standards and addresses topics of importance in today’s Hawaii. In FY 08 the resource underwent editing and formatting prior to finalization. This effort is supported in part by a grant from the USFS with NARS staff supervision. DOFAW was granted \$12,000 from USFS to host FY 09 teacher workshops on Maui, Oahu, Big Island, and Kauai featuring the Hawaii Specific Curriculum and to support the continuing education of DOFAW’s Information and Education Specialist. In addition, Ducks Unlimited through Pacific Coast Joint Venture awarded DOFAW a \$5,000 grant to support the development and production of a wetland brochure.

In addition to managing the programs and efforts above, it is the goal of the Information and Education Specialist to increase the Division’s presence in the community. Assisted by an AmeriCorps intern, in FY 08 staff had educational booths at 17 outreach events reaching thousands of community members; led more than 400 residents in various field/service trips to Kaena Point; and offered nine classroom presentations to elementary through college age

students. The DOFAW Information and Education specialist continues to write for grants to increase environmental literacy and conservation opportunities for Hawaii's community members.

A continuing challenge is reaching all of Hawaii's communities with outreach and education programs about natural areas and forest and wildlife resources with an extremely limited staff. Having outreach staff dedicated to each island branch would allow for more hands-on outreach and in-depth programs such as service projects, guided field trips, and presence at local events such as Earth Day. Branch based outreach staff could also act as liaisons between DOFAW and local schools, providing classroom programs and field-trip opportunities, hence building relationships with local constituents to help increase support for DLNR programs. Currently there are no permanent Division-wide island based outreach staff dedicated to each island branch; only one permanent Education and Outreach Specialist exists in the Administration Office.

CONCLUSION

Detailed project plans and accomplishment reports for the NARS, NAPP, Watershed Partnership Program, Rare Plant Program and HYCC are available through links from DOFAW website or from the:

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To download a pdf copy of this report, please go to <http://hawaii.gov/dlnr/reports>

LNR 407 NATURAL AREAS MANAGEMENT BUDGET SUMMARY FY 08

Table A: FY 08 Natural Area Reserve System Expenditures (General Fund Appropriation G-08-047)

Total = \$1,192,742	
NARS 'A' Personnel Expenditures FY 08 (22 positions)	= \$809,105
NARS 'B' Operating Expenditures FY 08	= \$383,637

FY 09 Natural Area Reserve System Allocation (General Fund Appropriation G-09-047)

Total = \$1,207,685

NARS 'A' Personnel Allocation FY 09 (22 positions) = \$ 885,906

NARS 'B' Operating Expenditures FY 09 = \$ 321,779

Table B: Natural Area Reserve Fund Revenues FY 08 (S-08-342)

Total = \$10,494,889

Revenue Source	Timeframe	Amount
FY 08 Conveyance Tax transfers	7/1/2007 – 6/30/2008	\$9,602,005
Investment pool revenues	7/1/2007 – 6/30/2008	\$885,704
Other	7/1/2007 – 6/30/2008	\$7,180
	Total Revenues =	\$10,494,889

Table C: FY 08 Natural Area Reserve Fund Expenditures (Special Fund Appropriation S-08-342)

Total = \$20,334,768

NARF 'A' Personnel Expenditures FY 08 (22 positions) = \$884,639

NARF Expenditures FY 08 = \$7,187,814

Transfers = \$7,773,554

Encumbrances = \$4,488,761

FY 09 Natural Area Reserve Fund Allocation (Special Fund Appropriation S-09-342)

Total drawdown = \$16,250,455

NARF 'A' Personnel Allocation FY 09 (22 positions) = \$1,528,744

NARF 'B' Operating Allocation FY 09 = \$8,648,596

Transfers = \$6,073,115